

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

(amended)

1. (amended) A pyrotechnic device comprising:
 - a) an igniter;
 - b) a firing energy storage module connected to said igniter;and,
 - c) a constant current charging module connected to said firing energy storage module.
2. (amended) The pyrotechnic device of claim 1, wherein said firing energy storage module is connected to said constant current charging module by a switch.
3. (amended) The pyrotechnic device of claim 1, wherein said firing energy storage module is connected to said igniter by a switch.
4. (amended) The pyrotechnic device of claim 1, wherein said firing energy storage module is a firing capacitor.
5. (amended) The pyrotechnic device of claim 4, wherein said pyrotechnic device is an electronic detonator.

6. (amended) The pyrotechnic device of claim 5, further comprising an ASIC containing said constant current charging module.
7. (amended) The pyrotechnic device of claim 6, wherein said electronic detonator is for use in a system of multiple detonators, and said constant current charging module is configured and/or programmed to limit [[the]] current to said firing capacitor to below an amount that could cause excessive voltage sagging in said system.
8. (amended) The pyrotechnic device of claim 7, wherein said constant current charging module is further configured and/or programmed to limit current to below an amount that could result in inadvertent firing of said igniter.
9. (amended) The pyrotechnic device of claim 7, wherein said constant current charging module is further configured and/or programmed to activate in response to an arming command.
10. (amended) A method of charging a pyrotechnic device comprising the following steps:
 - a) providing at least one pyrotechnic device with an igniter and a firing energy storage module; and
 - b) charging said firing energy storage module in preparation for firing of said pyrotechnic device, wherein [[the]]

current to said firing energy storage module is limited
to a constant current.

11. (canceled)
12. (amended) The method of claim ~~11~~ 10, further comprising the step of establishing a system including multiple pyrotechnic devices each having an igniter and a firing energy storage module, said system including a master device and a bus connecting said master device to said pyrotechnic devices.
13. (original) The method of claim 12, wherein said system is an electronic blasting system, said master device is a blasting machine, said pyrotechnic devices are electronic detonators, and said firing energy storage modules are firing capacitors.
14. (amended) The method of claim 13, wherein each of said electronic detonators includes a constant current charging module.
15. (original) The method of claim 14, further comprising the step of issuing an arming command from said blasting machine, said constant current charging module configured and/or programmed to activate in response to said arming command.

16. (original) The method of claim 15, wherein said firing capacitor is connected to said constant current charging module by a switch.
17. (original) The method of claim 16, wherein said firing capacitor is connected to said igniter by a switch.
18. (original) The method of claim 17, wherein said firing capacitors are charged in a staggered fashion.
19. (original) A constant current charging module for use in an electronic detonator.
20. (amended) The constant current charging module of claim 19, wherein said constant current charging module is configured and/or programmed to respond to an arming command issued from a blasting machine by charging a firing capacitor in the electronic detonator with a constant-current, rail-voltage limited process.
21. (new) The method of claim 10, further comprising the step of conducting a capacitance check at least partly during step b).

Amendments to the Drawings

The attached drawing sheet includes a change to Fig. 4. The sheet includes only Fig. 4, the original of which it replaces. Per the objection made in the Office Action, this figure has been revised to include a depiction of the grounding of pin 13.

Attachments: Replacement Sheet
Annotated Sheet Showing Changes